Patent Claims

1. A milling tool for milling recesses into a workpiece, in particular circular grooves, having a disk-shaped or plate-shaped base body (14) and at least one cutting body (15) situated on the outer periphery of the base body (14), the cutting body or each cutting body (15) being angled in relation to the disk-shaped or plate-shaped base body (14).

2. The milling tool as recited in Claim 1,
characterized in that the thickness (DS) of the cutting body or each cutting body (15) corresponds approximately to the width (DN) of the recess (13) to be milled.

3. The milling tool as recited in Claim 1 or 2,
characterized in that the cutting body or each cutting body (15) is angled in relation to the disk-shaped or plate-shaped base body (14) in such a way that an inner milling radius (RKI), defined by the cutting body or each cutting body (15), is greater than an outer circumferential radius of the disk-shaped or plate-shaped base body (14).

4. The milling tool as recited in one or more of Claims 1 through 3,
characterized in that the cutting body or each cutting body (15) is angled in relation to the disk-shaped or plate-shaped base body (14) in such a way that the cutting body or each cutting body (15) is angled to one side in relation to a disk-shaped or plate-shaped surface (19) defined by the base body (14), one outside of the cutting bodies (18) and the surface (19) enclosing an angle (PHI) which is greater than 0° and smaller than 90°.

5. The milling tool as recited in Claim 4,
characterized in that the outside (18) of the cutting bodies (15) and the surface (18) of the base body (14) enclose an angle (PHI) which is greater than 5° and smaller than 65°.

6. The milling tool as recited in Claim 4,
characterized in that the outside (18) of the cutting bodies (15) and the surface (18) enclose an angle (PHI) which is greater than 5° and smaller than 35°, preferably an angle (PHI) of 10°.

7. The milling tool as recited in one or more of Claims 1 through 6,
characterized in that a milling radius defined by the cutting body or each cutting body (15) is greater than the radius of a circular recess (13) to be milled.

8. A method for milling recesses (13) into a workpiece (11), in particular circular grooves, the workpiece being milled by a milling tool (10) in such a way that an intended recess results, characterized in that a milling tool (10) as recited in one or more of Claims 1 through 7 is used.

9. The method as recited in Claim 8,
characterized in that, during milling, a rotation axis (20) of the milling tool (10) and the surface (12) of the workpiece (11), into which the circular recess is milled, enclose an angle (PHI) which is greater than 0° and smaller that 90°.

10. The method as recited in Claim 8 or 9,
characterized in that the angle (PHI) between the rotation axis (20) of the milling tool (10) and the surface (12) of the workpiece (11), into which the circular recess is cut, corresponds approximately to the angle (PHI) between the outside (18) of the cutting bodies (15) and the disk-shaped or plate-shaped surface (19) of the base body (14).

11. The method as recited in one or more of Claims 8 through 10,
characterized in that, in addition to a radius (RZI), the depth (TN), and the width (DN) of the circular recess (13) to be milled, a permissible tolerance (TOLI, TOLA) is defined for the recess, a suitable milling radius (RKI) and a suitable angle (PHI) between the outside (18) of the cutting bodies (15) of the milling tool and the disk-shaped or plate-shaped surface (19) of the base body (14) of the milling tool (10) being calculated from these values.

12. The method as recited in Claim 11,
characterized in that a tolerance (TOLI) for a circular inner wall and/or a tolerance (TOLA) for a circular outer wall of the circular recess to be milled are/is established.

13. Use of a milling tool as recited in one or more of Claims 1 through 7 for milling circular recesses, in particular circular grooves, on rotation-symmetrical, disk-shaped, or annular components, namely gas turbine components.

14. Use of a milling tool as recited in one or more of Claims 1 through 7 for reconditioning groove-shaped recesses on gas turbine components which are deformed during an operation.

15. Use of a milling tool as recited in one or more of Claims 1 through 7 for milling flow channels between adjacent blades or for milling blade clearances during the manufacture of integrally bladed rotors (blisks or blings) of a gas turbine.

16. Use of a milling tool as recited in one or more of Claims 1 through 7 for milling single-blade profiles for gas turbine blades.